Small Business Innovation Research/Small Business Tech Transfer

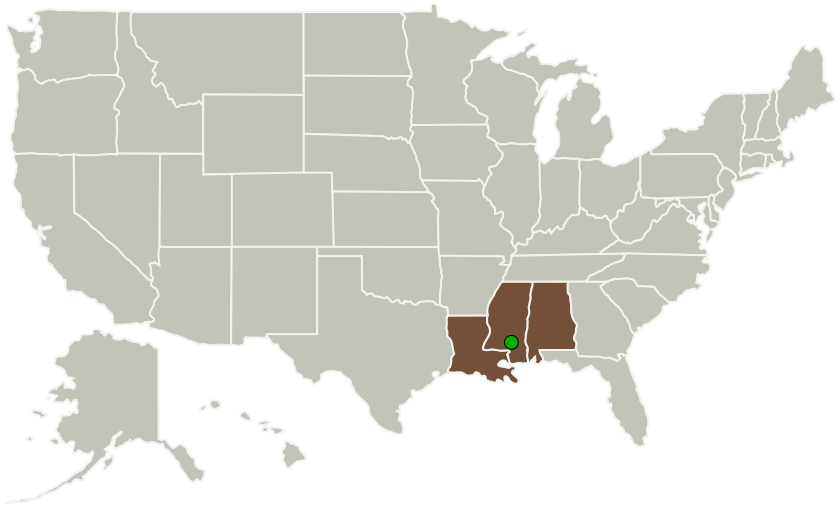
MEMS Based Solutions for an Integrated and Miniaturized Multi-Spectrum Energy Harvesting and Conservation System, Phase II

Completed Technology Project (2014 - 2016)

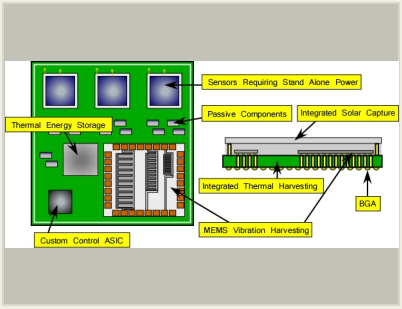
Project Introduction

The objective of this proposal is to integrate three unique energy harvesting technologies utilizing our existing research strengths that will be of interest and utility to NASA applications and environmental conditions. By developing multiple technologies, NASA will be able to harvest energy from multiple waste energy sources, namely environmental vibrations, thermal energy, and solar flux. These devices were initially developed and demonstrated separately, but will be enhanced, matured, and integrated during Phase II. The prototype resulting from this effort will be capable of harvesting energy in a variety of environments which support NASA's broad mission.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Radiance Technologies, Inc.	Lead Organization	Industry	Huntsville, Alabama
Louisiana Tech University(LA Tech)	Supporting Organization	Academia	Ruston, Louisiana
Stennis Space Center(SSC)	Supporting Organization	NASA Center	Stennis Space Center, Mississippi



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Primary U.S. Work Locations	
Alabama	Louisiana
Mississippi	

Project Transitions

September 2014: Project Start

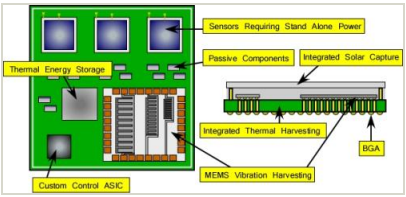
September 2016: Closed out

Closeout Summary: MEMS Based Solutions for an Integrated and Miniaturized Multi-Spectrum Energy Harvesting and Conservation System, Phase II Project I mage

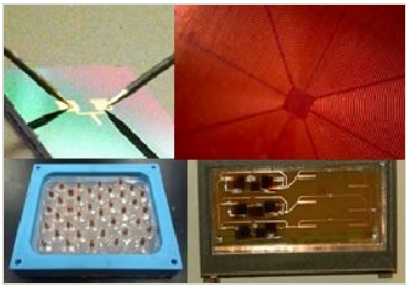
Closeout Documentation:

- Final Summary Chart Image*(https://techport.nasa.gov/file/137557)*

Images



Briefing Chart Image
MEMS Based Solutions for an Integrated and Miniaturized Multi-Spectrum Energy Harvesting and Conservation System, Phase II *(https://techport.nasa.gov/image/131048)*



Final Summary Chart Image
MEMS Based Solutions for an Integrated and Miniaturized Multi-Spectrum Energy Harvesting and Conservation System, Phase II Project Image *(https://techport.nasa.gov/image/131234)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Radiance Technologies, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Heath A Berry

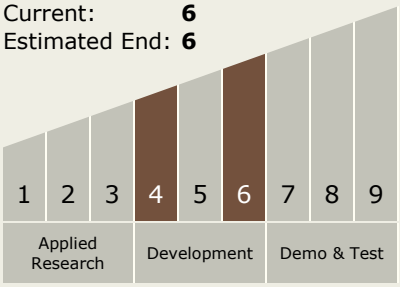
Co-Investigator:
Heath Berry

MEMS Based Solutions for an Integrated and Miniaturized Multi-Spectrum Energy Harvesting and Conservation System, Phase II

Completed Technology Project (2014 - 2016)

Technology Maturity (TRL)

Start: **4**
Current: **6**
Estimated End: **6**



Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
  - TX03.1 Power Generation and Energy Conversion
    - TX03.1.4 Dynamic Energy Conversion

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System